CLAIMS

1.   An interface device, comprising

an Ethernet frame and a SONET frame convertible interface device, wherein a 1st holding part with a specific VLAN identifier of said Ethernet frame and a STS path identifier of said SONET frame are placed opposite each other; and

a multiplexing part capable of multiplexing an Ethernet frame having said specific VLAN identifier corresponding to said specific STS path identifier that is held by said 1st holding part among a plurality of input Ethernet frame VLAN identifiers.

2.   The interface device according to claim 1, comprising:

an Ethernet frame and SONET frame convertible interface device for establishing a 2nd holding part with a SONET frame specific STS path identifier and an Ethernet frame specific VLAN identifier placed opposite each other; and

an isolation part that imparts a VLAN identifier corresponding to the STS path identifier that is held by the 2nd holding part to an extracted plurality of Ethernet frames by extracting each Ethernet frame and the SONET frame STS path identifier from a frame originating in SONET frames with a multiplexed plurality of Ethernet frames.

3.   A SONET multiplex isolation device, comprising:

a SONET multiplex isolation device with an Ethernet interface device;

wherein a SONET interface device is established;

and wherein the Ethernet interface device establishes a 1st holding part with the Ethernet frame specific VLAN identifier and a SONET frame specific STS path identifier are selectively placed to oppose each other; and

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a multiplexing part capable of multiplexing an Ethernet frame having a specific VLAN identifier corresponding to the specific STS path identifier that is held in the 1st holding part among an input plurality of Ethernet frame VLAN identifiers.

5   4.   A transmission system, comprising:

a plurality of SONET multiplex isolation devices having Ethernet interface devices and SONET interface devices established, wherein a 1st SONET multiplex isolation device among the plurality of SONET multiplex isolation devices establishes a 1st holding part with a Ethernet frame specific VLAN identifier and a SONET frame specific STS path identifier placed
10   opposite each other;

a multiplexing part that multiplexes a plurality of Ethernet frames having a specific VLAN identifier corresponding to the specific STS path identifier that is held in the 1st holding part among an input plurality of Ethernet frame VLAN identifiers, along with a 2nd SONET multiplex isolation device among the plurality of SONET multiplex isolation devices with
15   a 2nd holding part with the SONET frame specific STS path identifier and Ethernet frame specific VLAN identifier placed opposite each other; and

an isolation part that imparts a VLAN identifier corresponding to the STS path identifier that is held in the 2nd holding part to each extracted Ethernet frame by extracting each Ethernet frame and the SONET frame STS path identifier from a frame originating in the
20   SONET frame.

5.   A frame transmission method for frame transmission for an Ethernet frame and SONET frame, comprising:

inputting a plurality of Ethernet frames having a specific VLAN identifier
25   among the plurality of Ethernet frames passes through to be multiplexed.

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